

Patent Claims

1. A method for forming the intensity profile of a laser beam, in particular for producing a homogeneous intensity profile, the laser beam striking an optically addressable spatial light modular (OASLM), whose local transmission or reflection properties depend in nonlinear fashion on the local illumination intensity.
2. The method as recited in Claim 1, characterized in that the transmission or reflection characteristic of the OASLM has a saturation range, in which the locally transmitted or reflected intensity is substantially independent of the locally incident intensity, this saturation range being selected as the working range.
3. The method as recited in Claim 2, characterized in that the intensity of the laser beam to be formed is adapted to the saturation range of the OASLM by widening the beam and/or by optical filters.
4. The method as recited in Claim 2 or 3, characterized in that for purposes of beam widening, an optical imaging system is inserted into the optical path of rays, within which the OASLM is located.
5. The method as recited in Claim 4, characterized in that the optical imaging system encompasses two telescope imaging systems (1, 2, 5, 6), designed as

mechanically or electrically adjustable or controllable zoom systems, the beam widening thus being variable, in particular, adaptable to changes in intensity.

6. The method as recited in one of Claims 1 through 5, characterized in that the OASLM is a liquid crystal modulator.
7. The method as recited in one of Claims 1 through 6, characterized in that the OASLM is partitioned into individual zones, which are able to be electrically driven as separate zones to alter the local transmission and/or reflection properties of the OASLM.
8. A device for forming the intensity profile of a laser beam, in particular for producing a homogeneous intensity profile, comprising an optically addressable spatial light modular (OASLM), whose local transmission or reflection properties depend in nonlinear fashion on the local illumination intensity, as well as at least one telescope imaging system, capable of spatially widening the laser beam.
9. The device as recited in Claim 8, characterized in that the OASLM is a liquid crystal modulator.
10. The device as recited in Claim 8 or 9, characterized in that the OASLM is partitioned into individual zones, which are able to be electrically driven as

separate zones to alter the local transmission and/or reflection properties of the OASLM.

11. A use of an optically addressable spatial light modulator (OASLM) for forming the intensity profile of a laser beam, in particular for producing a homogeneous intensity profile.

09785837.080601